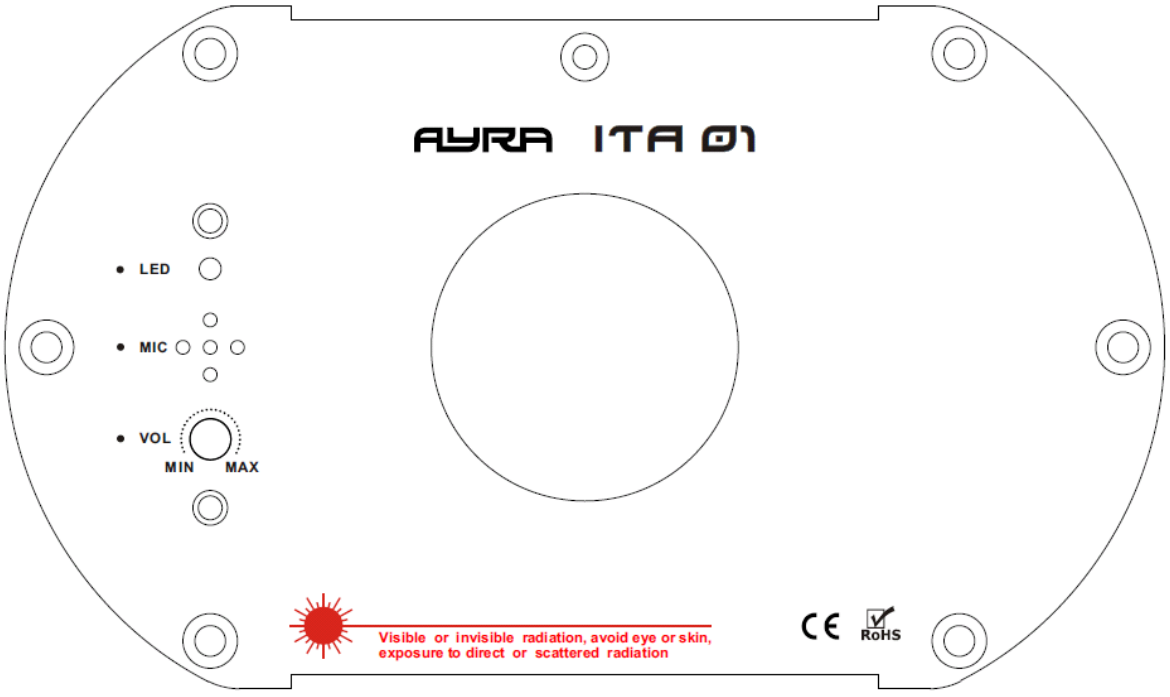
ITA 01 MKII

130 mW red/green DMX laser



User manual

Safety precautions

WARNING: This unit may cause serious injury to eyesight when used incorrect. It therefore is strongly advised to read this user manual carefully, to get familiar with the functions of this laser device.

WARNING: This unit must be operated by, or under the supervision of an adult. This device is not suitable for children.

WARNING: Do not look directly into the beam coming out of the lens, from short distance or when a solid beam is projected. This may cause serious injury to eyesight. Ayra is not responsible for any injuries caused by incorrect use of this device.

WARNING: Do not project the beam of this unit on to reflective surfaces, as the shattering beam may cause injury to eyesight.

Installation requirements:
- Always check the voltage settings on the unit and the power supply you want to connect the device to. If the voltage requirements do not meet, do not connect the device as this may cause serious damage.
- This device must be installed by a professional technician, in a standing or hanging position. Always pay attention to the positioning of the unit, as the beams may project directly into your audience.
- It is strongly advised to **NOT** project the beams directly into your audience. Ayra strongly recommends a minimum distance of 1.5 meters in height between the lowest projected laser beam and your audience, for optimal safety. If there is no other option, keep a minimum distance of 5 meters from the beam exit to the first beam that hits your audience.
- When installed in a standing position, a safety cable is recommended to secure the unit. Ayra recommends to use the bracket when installing the unit on a flat surface, by mounting it with a proper bolt into the surface it is placed on.
- When installed in a hanging position, this unit **MUST** be secured by using a safety cable, capable of holding 10x the weight of this device.
- When installed in a hanging position, this unit must be mounted to a proper surface, e.g. a truss system. When using a truss system, Ayra recommends the use of a proper hook or halfcoupler.
- Make sure there are no flammable objects in the direct environment of the device (such as decorative objects). Keep a minimum distance of 1.5 meter.
- Do not block the beam-exit and fan
- Keep a minimum distance of 0.5 meter from any walls to provide sufficient cooling
- Make sure the beam-exit and fan are not blocked by any objects in the near environment
- This unit must be connected to a grounded power supply that meets the voltage requirements of the device.

Maintenance and protection
- Keep the unit away from dusty environments, as this may have negative effect on the fan-cooling system and laser optics. Ayra recommends using a flightcase for storage of this device. Clean the optics and fan of the laser with a small, soft brush and vacuum cleaner when needed. Clean the housing of the unit with a damp cloth. **WARNING:** Always disconnect the unit from the power supply when cleaning the unit. Reconnect the unit only if any moist on the fixture disappeared completely.
- This laser device is a lighting effect, designed to support visual entertainment while playing music. Continuous use is not recommended. Do not use the device longer than 3 hours subsequently, so the unit can cool down. This will provide a longer lifespan for the diodes. Apply a cooling-down time of 25

minutes before re-activating the laser.
- Do not switch the power on and off too often, as this may cause serious damage to the unit.
- Avoid heavy shocks and collision during transport and use, as this might cause damage to the laser diodes, electronic circuit, optics and housing.
- Keep the device away from moisture, rain, water or any liquids as this may cause a short circuit and/or electric shocks. If any liquid enters the unit, power supply or housing of the unit, disconnect the unit immediately and do not reconnect the power supply. Contact your local dealer or technician to inspect the unit for any damage.

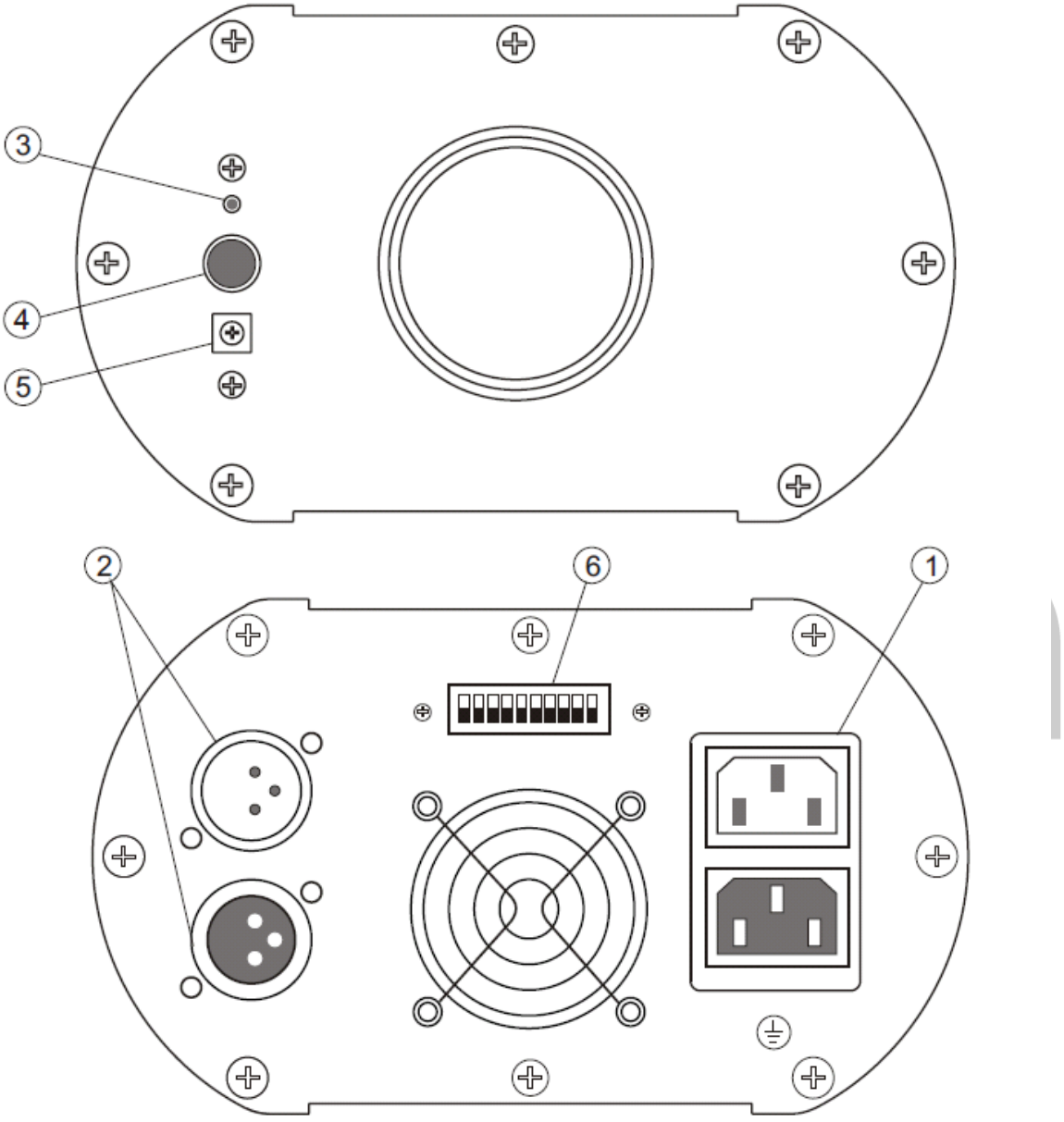
IEC in/out power supply
Connect several units by using the provided IEC to Schuko cable. It is possible to link multiple ITA devices, but after 10 units the connection to the main power supply must be renewed! Also don’t combine the power link function of ITA units with any other devices, especially not with devices that consume lots of energy (such as fog machines, active speakers, etc.)

Box contents

Box contents
1x laser device
1x user manual
1x IEC to Schuko power cable

Unit and accessory inspection
- Always use the supplied power cable to connect the unit to a power supply. If the cable appears broken or has visible damage, do not use it. The supplied cable can be replaced with a regular IEC to Schuko cable, with a minimum cable diameter of 0.75m².
- If the unit will not be used for a longer period of time, disconnect it from the power supply and store it in a dust-free environment.
- Always check the unit for possible damage before use. If you suspect that something is wrong with the unit, do not connect it to a power source! When you suspect that your unit is broken or damaged, contact your local dealer or a certified technician to inspect the unit.
- When your device does not generate any laser beams, do not look directly into the lens. When the laser suddenly produces a beam, it may cause severe eye damage, possibly resulting in permanent visual loss.

Device overview



1. **Power supply:** Power IN and Power OUT. Connect the device to a power supply with the provided cable.
2. **DMX in/output:** When using a DMX-controller, connect the device with the supplied XLR-cable. The unit has a XLR in- and output for the distribution of DMX signals.
3. **LED indicator:** LED indicator for the music-activated mode
4. **Microphone:** Built-in microphone for the music-activated mode.
5. **Microphone sensitivity:** Variable setting of the microphone sensitivity, use a small screwdriver to change the sensitivity from low to high.
6. **DMX dipswitch:** Use these dipswitches to change the operating mode, or select a starting address for the DMX-mode.

Setting up the device

Setting up the device

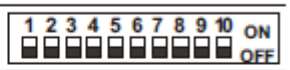
- When the power supply is connected, the unit will first calibrate the stepping motors of the unit. It is normal that this may cause any noise. When the calibration is done, the unit is ready to be used (in the selected DMX, automatic or music controlled mode)
- It is possible that the unit may shut off the beam projection when no music or sound is detected. This will avoid the projection of a solid, static beam, which may cause injury to eyesight.
- This unit uses stepping motors to create variable movements to the laser beam. This way, figures and patterns can be made. The unit uses high-speed stepping motors to create the moving beams of the laser. It is normal that the laser beam and projection may appear 'flickering' when projecting large or complex patterns.
- The projected beams of the unit may appear shivering when projecting complex or large patterns on surfaces as a wall, ceiling or decorative cloth.
- With the use of a red and green diode, the creation of yellow/orange beams is possible in mid-air. However, severe shaking, collision and rough installing procedures may cause the optics of the laser to move slightly, thus separating the beams.

Selecting a working mode

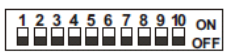
This laser device has three working modes, which are **automatic, music-controlled** and **DMX**. To select the right operating mode for your situation, use the dipswitch panel on the rear of the unit.

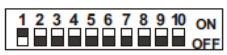
A DMX-dipswitch panel works with a binary character. It sends a 0 or 1 message to the electrical circuit. To select a working mode, pay close attention to the information scheduled below. Every DMX dipswitch stands for a certain value, which is on or off. The values are stated as below:

1 – 1
2 – 2
3 – 4
4 – 8
5 – 16
6 – 32
7 – 64
8 – 128
9 – 256
10 – mode switch (DMX ON/OFF)

DECIMAL	BINARY LSB→MSB	USAGE OF DIP SWITCH
0	000000000	
1	100000000	
14	011100000	
511	111111111	

To select the different working modes, pay close attention to the setting of DMX dipswitches below:


Music Active: With the change of music rhythm, the effect of laser will change according. As present program


Auto Active: The laser run preset program

DMX 512: The laser under control by DMX 512 Controller

Square pattern test

Dot drawing test

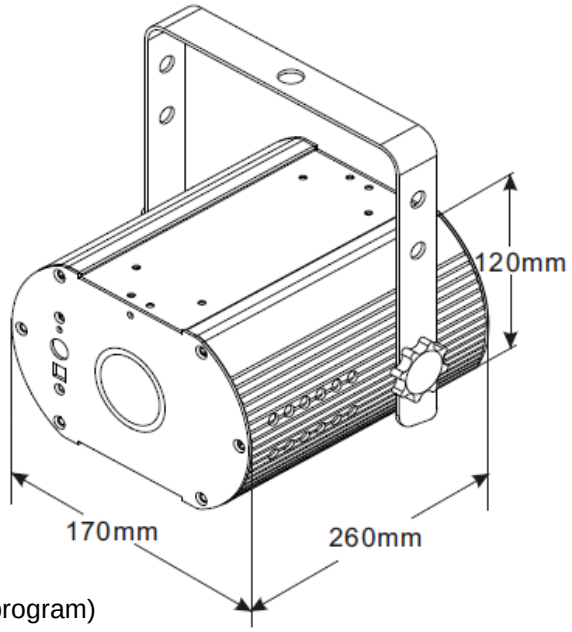
DMX operating mode

While in the DMX mode, it is possible to select the working mode of the laser. That way, you can either choose to use your own programmed presets of your DMX controller, or to activate the music activated/automatic working mode of the laser to have a fully-automatic lasershow. Depending on the starting address you selected earlier, the laser responds to the following commands. In this example, we use DMX starting address 1. When you use a different DMX-starting value, for example 29, the unit will respond from channel 29, 30, 31.. and so on.

For more information about DMX, consult the manual of your DMX controller or software.

Channel		DMX-512 Value	Function
Ch1	Working mode	0~63	Black-out
		64~127	Pattern control
		128~191	Auto mode
		192~255	Music active mode
Ch2	Pattern	0~255	Select 1-25 patterns
Ch3	Rotation	0~127	Rotate angle
		128~191	Rotation speed
		192~255	Reverse rotation speed
Ch4	Patten horizontal rotation	0~127	X rotation position
		128~255	X rotation speed
Ch5	Pattern vertical rotation	0~127	Y rotation position
		128~255	Y rotation speed
Ch6	Patten horizontal move	0~127	Pan position
		128~255	Pan move speed
Ch7	Pattern vertical move	0~127	Tilt position
		128~255	Tilt move speed
Ch8	Pattern size	0~63	Static size
		64~127	Enlarge speed from fast to slow
		128~191	Zoom in speed from slow to fast
		192~255	Zoom speed from slow to fast
Ch9	Color	0~127	Color speed
		128~255	Color change speed

Technical specifications



TYPE: ITA 01 MKII

Laser diode:
- green: class 3B, 532 nm, >30 mW
- red: class 3B, 650 nm, >100 mW

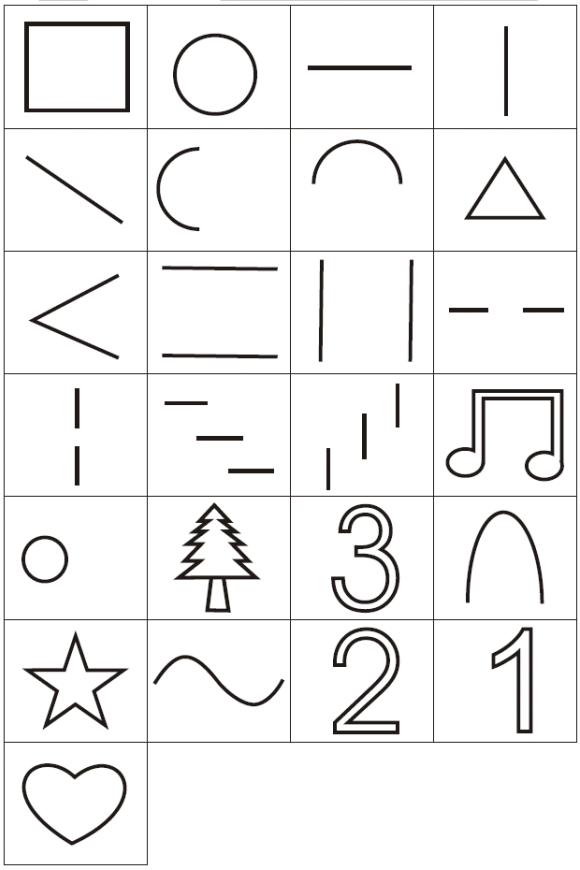
Scan type:
- stepping motors

Scan motor angle:
- maximum angle: +/- 25 degrees

Working modes:
- automatic (full-automatic laser show with built-in program)
- music activated (full-automatic laser show with built-in program, responding to the beat of music)
- DMX (9 channels)

- input signal bandwidth: 0~1000 Hz
- environment temperature: -10 – 35 degrees Celsius
- netto weight: 2 kg
- dimensions: 260 x 170 x 120 mm

Built-in patterns:



Electrical diagram